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Running Head: MOTIVATION AND PROCESSING EMOTIONAL FACES

What You Want to Avoid is What You See:

Social Avoidance Motivation Affects the Interpretation of Emotional Faces

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Abstract

This study investigated the effects of habitual social approach and avoidance motivation on the classification of facial expressions of different visual clarity. Participants ($N = 78$) categorized partially masked emotional faces expressing either anger or happiness as positive or negative. Participants generally tended to interpret the facial expressions in a positive way. This positivity effect was reduced when persons were highly avoidance motivated. Social avoidance motivation predicted fewer positive and more negative interpretations in the least visible condition that provided extremely little information on the facial expression. Thus, people high in social avoidance motivation are likely to have anticipated angry faces as the facial stimuli offered only minimal information. The results for social approach motivation did not reach statistical significance. To conclude, it seems that persons who are most afraid of having negative social interactions (i.e., those high in social avoidance motivation), anticipate and interpret social information in the most negative way, which could lead to the reinforcement of the avoidance motivation.

Keywords: social motivation, approach, avoidance, emotional faces, social-information processing

What You Want to Avoid is What You See:

Social Avoidance Motivation Affects the Interpretation of Emotional Faces

Since the classic studies of Harlow (1958) and the advent of attachment theory (Ainsworth, Bell, & Stayton, 1974) showing the importance of close social relationships for healthy development, belonging and social affiliation has been acknowledged as one of the most fundamental human motives (Baumeister & Leary, 1995; Cacioppo & Hawkley, 2005). However, people differ in the way they strive for satisfying their need for affiliation. Whereas some people want to belong to a social group and be liked by others (i.e., *social approach motivation*), others primarily wish not to be excluded or rejected (i.e., *social avoidance motivation*; McClelland, 1985).

Although, at the first glance, they appear as two sides of the same coin, social approach and avoidance motivation constitute two different motivational systems: An appetitive system that is associated with processing positive social cues, and an aversive system that is associated with processing negative social cues (Elliot & Covington, 2001). In addition, approach and avoidance motivation have different correlates. Approach motivation is associated with the behavioral activation system, active coping styles, extraversion, and a positive temperament. Avoidance motivation is associated with the behavioral inhibition system, passive coping styles, neuroticism, and a negative temperament (Gable, Reis, & Elliot, 2003). Not surprisingly, social approach motivation is associated with positive emotional and social outcomes, whereas social avoidance motivation has negative effects for social success and subjective well-being (Gable & Berkman, 2008; Mehrabian, 1994).

Little is known about the processes linking social approach and avoidance motivation to positive and negative outcomes, respectively (Gable & Berkman, 2008). One of the possible links is the interpretation of social information. As Mehrabian (1994) argued, the positive expectations of social approach motivation might be associated with a positive interpretation of

social information, such as seeing happiness as invitation to affiliate in an ambiguous facial expression. In contrast, the negative expectations of social avoidance motivation might be associated with a negative interpretation of social information, such as seeing anger and rejection in an ambiguous facial expression. In turn, the different interpretations of social information might lead to different experiences of the same situation and, consequently, to different behaviors (e.g., friendly or gruff), sparking a positive or negative interaction, which reaffirms prior expectations associated with social approach and avoidance motivation.

The hypothesis of differential interpretation of social information associated with social approach and avoidance motivation has been investigated using written social information. For instance, Strachman and Gable (2006, Study 1) found that participants high in social avoidance motivation interpreted an ambiguous essay (including positive, negative, and neutral social events) in a more negative way than participants low in social avoidance motivation. In contrast, participants high in social approach motivation interpreted the neutral information in the essay in a positive way. Additionally, when participants were given a social avoidance goal for an interaction with an unknown confederate, they expressed more dislike for the confederate (Study 2). In both studies, social avoidance motivation played a stronger role for the interpretations than social approach motivation. Similarly, Downey and Feldman (1996) found that people high in social avoidance motivation reported heightened feelings of rejection in response to ambiguous information (Study 2). Finally, Gomez and Gomez (2002) found that a general appetitive motivational tendency was associated with higher positivity and a general aversive motivational tendency to higher negativity in the completion of word fragments. It seems, then, that social approach and, to an even stronger degree, avoidance motivation are associated with biased interpretation of social information. This might be the case because people high in approach motivation do not want to miss a possible positive social interaction to affiliate, whereas people

high in avoidance motivation do not want to miss any signal of a potentially negative social interaction so as to be able to avoid it.

In the current research, we examined the association between habitual social approach and avoidance motivation and the interpretation of ambiguous emotional faces as operationalized by different degrees of visibility. We used facial expressions as stimulus material because processing of faces is fundamental for the experience and behavior in social situations (e.g., Chartrand & Bargh, 1999). Happy faces were used as positive facial expressions and angry faces as negative facial expressions. Happy faces stand for a positive emotional state and, therefore, signal preparedness to affiliate. In contrast, angry faces stand for a negative emotional state that can be directed against others (Ekman, 1992) and, therefore, can be interpreted as signaling interpersonal rejection.

In addition, the faces were masked to reduce the visual clarity of the picture. In contrast to clear pictures of expressions of happiness or anger, less visually clear pictures of the same emotional expressions leave room for interpretations and, thus, misclassifications. This room for interpretation should allow that variables other than the actual facial expression – such as social approach and avoidance motivation – influence the classifications. We expect that social approach motivation is associated with a positively biased interpretation of facial stimuli, whereas social avoidance motivation is associated with a negatively biased interpretation of facial stimuli. The more room for interpretation the stimuli offer (i.e., the more the facial stimuli are masked), the stronger should be the effect of social motivation on the classification of the facial expression.

We used the number of false classifications (i.e., angry faces classified as positive and happy faces classified as negative) as dependent variable. False classifications can be interpreted as biased information processing, i.e., a tendency to interpret partially masked social stimuli in a

particular (positive or negative) way. We did not analyze the correct classifications (i.e., positive interpretations of happy and negative interpretations of angry faces) because it is impossible to distinguish if the correct classifications were caused by an interpretation bias or by recognition of the actual facial expression. Moreover, the number of correctly and incorrectly classified stimuli always adds up to 100% of the stimuli, making the two indices redundant.

We expect that social approach motivation is positively and social avoidance motivation is negatively associated with false classifications of angry faces. The opposite should be true for false classifications of happy faces. The effects of social motivation for misinterpreting the facial expression should be stronger, the less visually clear the pictures are. We did not restrict the time for the responses because the speed of the classifications was not the focus of the current study.

Method

Participants

Participants were recruited via newspaper advertisements, flyers, and advertisements in students' mailing lists. The sample consisted of $N = 78$ students and other adults (79% females, age $M = 25.08$, $SD = 5.84$, range 19–49 years). The majority of the participants (75.6%) held a Swiss citizenship, 15.6 % were from other German-speaking countries, and 8.8% from other countries. About half of the participants (53.8%) reported to be in a long-term relationship or married, 2.6% divorced, and 43.6% single. A small group (10.3%) had one or two children. Most of the participants (79.5%) were students.

We ran the study in laboratories of the University of Zurich. All participants gave written informed consent for participation. After participation, they were fully debriefed and either paid 20 CHF or received extra course credit.

Stimuli and Procedure

Facial stimuli were chosen from the Lifespan Database of Adult Emotional Facial Stimuli (FACES, Ebner, Riediger, & Lindenberger, 2010). Colored pictures of 50 models were selected (12 young males, 13 young females, 13 middle-aged males, and 12 middle-aged females), each clearly expressing either happiness or anger as indicated in a validation study conducted by Ebner et al. (2010). Pictures were cut vertically from hairline to chin and horizontally at the cheekbones. Consequently, the picture length and width varied from 10 to 12 cm. For different levels of ambiguity, each picture was partially masked via Adobe Photoshop 7.0 (“grain” command) in five different degrees, ranging from very low visibility (strongly masked) to very high visibility (weakly masked).¹ Figure 1 shows an example of masking of a negative female facial expression. We used the program DirectRT (Jarvis, 2004) for stimulus presentation, timing, and data collection. Pictures were displayed in the center of the screen.

An experimental trial started with a blank screen presented for 100 ms and was followed by a mask of “x” in the size of the facial stimulus for 1000 ms. Next, the masked picture of a positive (happy) or negative (angry) facial expression was presented. Participants were instructed to categorize the facial expression as positive by pressing “p” on the keyboard or negative by pressing “n.” We instructed participants to guess if they were not sure. There was no time restriction for the response.

Participants were tested alone or in groups up to five in separated cubicles. First, participants completed an on-line questionnaire assessing their social approach and avoidance motivation. The following classification task consisted of three blocks with 160, 160, and 180 trials each (with 15 test trials at the beginning of the first block), resulting in a total of 500 trials (50 faces \times 2 facial expressions \times 5 degrees of masking).² Each facial expression was presented in all five degrees of masking (see Figure 1). The masked faces appeared successively from very ambiguous to very clear. The presentation of positive and negative facial expressions was

randomized. Before each block, three different pictures of social situations were presented and participants were asked to write a short story to each of them in order to activate the habitual social motivation. After three minutes, the picture disappeared from the screen and participants were asked to continue with the experiment.

Participants response time for a stimulus was $M = 1'744$ ms ($SD = 666$ ms), resulting in approximately 15 minutes for all 500 stimuli.³ The entire study lasted approximately 30 minutes.

Assessment of Social Approach and Avoidance Motivation

The Multi Motive Grid (MMG; Sokolowski, Schmalt, Langens, & Pucca, 2000) assessed social approach and avoidance motivation. The MMG consists of 14 pictures of different social situations, each accompanied by a set of 4 to 10 statements assessing affiliation, achievement, and power motivation. We used only the affiliation-motive subscale in the current study (12 statements for social approach motivation, 12 statements for social avoidance motivation). By using a yes/no response scale, participants were asked to endorse those statements that, in their view, best match a given picture. Motive scores were calculated by summing across pictures the number of endorsed items reflecting social approach and social avoidance motivation. Thus, motive scores can range from 0 to 12 for approach and avoidance motivation, respectively. Sample statements for approach motivation are the following descriptors of ambiguous social scenes depicted in the pictures “Feeling good about meeting other people” and “Hoping to get in touch with other people.” Sample statements for avoidance motivation are “Being afraid of being rejected by others” and “Being afraid of being boring to others.” Previous studies have repeatedly demonstrated excellent retest-reliability, internal consistency, and validity of both scales. Sokolowski et al. (2000) and Strachman and Gable (2006) found internal consistencies $\alpha > .78$ for both scales. The internal consistency in the current study was lower than in the previous studies: for approach motivation Cronbach’s $\alpha = .62$ (mean score of the scale $M = 5.97$, $SD =$

2.11) and for avoidance motivation $\alpha = .63$ ($M = 5.68$, $SD = 2.43$). We discuss the relatively low internal consistencies in the Discussion. Social approach and avoidance motivation were uncorrelated ($r = .03$, $p = .822$).

Results

Preliminary Analyses

From a total of 39'000 classifications, 38.9% were classified correctly as negative (i.e., angry faces classified as negative), 42.9% were classified correctly as positive (i.e., happy faces classified as positive), 7.1% were classified falsely as negative, and 11.1% were classified falsely as positive. Figure 2 shows that correct positive and correct negative classifications of facial expressions significantly decreased and false positive and false negative classifications significantly increased with decreasing visibility, $\chi^2(4, N = 39'000) = 5'144.61$, $p < .001$. On average, participants classified $M = 270.1$ ($SD = 30.59$) of the 500 faces as positive and $M = 229.9$ ($SD = 30.59$) faces as negative, $t(77) = 5.80$, $p < .001$.

Main Analyses

We ran a multilevel analysis with facial expression (angry = 0, happy = 1), visual clarity of the picture (from 1 = very high visibility to 5 = very low visibility) at Level 1, social approach and avoidance motivation at Level 2, and the two-way and three-way interactions of the Level 1 and 2 variables as predictors of false classifications of the facial expressions:

$$\begin{aligned} \text{Percentage of False Classifications}_{ij} = & b_{0j} \\ & + b_1 \text{ Facial Expression}_{ij} \\ & + b_2 \text{ Expression Visibility}_{ij} \\ & + b_3 \text{ Approach Motivation}_{ij} \\ & + b_4 \text{ Avoidance Motivation}_{ij} \\ & + b_5 (\text{Facial Expression} \times \text{Approach Motivation})_{ij} \end{aligned}$$

$$\begin{aligned}
& + b_6 (\text{Facial Expression} \times \text{Avoidance Motivation})_{ij} \\
& + b_7 (\text{Facial Expression} \times \text{Expression Visibility})_{ij} \\
& + b_8 (\text{Expression Visibility} \times \text{Approach Motivation})_{ij} \\
& + b_9 (\text{Expression Visibility} \times \text{Avoidance Motivation})_{ij} \\
& + b_{10} (\text{Expression Visibility} \times \text{Facial Expression} \times \text{Approach Motivation})_{ij} \\
& + b_{11} (\text{Expression Visibility} \times \text{Facial Expression} \times \text{Avoidance Motivation})_{ij} \\
& + \varepsilon_{ij} \\
& b_{0j} = b_0 + \mu_{0j}
\end{aligned}$$

We expected (1) a significant three-way interaction of social approach motivation, facial expression, and visual clarity of the picture and (2) a significant three-way interaction of social avoidance motivation, facial expression, and visual clarity of the picture. Concretely, we expected that social approach motivation is positively and social avoidance motivation negatively associated with false classifications of angry faces. The opposite should be true for false classifications of happy faces. In addition, the effects of the motivations for the false classifications should be stronger, the less visible the picture is. When the facial expressions is clearly visible (i.e., the less the pictures are distorted), the fewer misclassifications should occur, providing an insufficient number of trials to test for differences between facial expressions and social approach and avoidance motivation.

We found a main effect of facial expression, $b = 3.54$, $SE_b = 0.53$, $F(1, 229.75) = 45.47$, $p < .001$, and a main effect of expression visibility, $b = 10.49$, $SE_b = 0.27$, $F(1, 251.45) = 1541.65$, $p < .001$. Participants made more false classifications when they classified angry faces (compared to happy faces) and they made more false classifications the less visible the facial expression was.

Social avoidance motivation. These main effects were qualified by an Expression Visibility \times Facial Expression \times Avoidance Motivation interaction, $b = 0.67$, $SE_b = 0.35$, $F(1, 505.77) = 3.75$, $p = .053$. To disentangle the three-way interaction, we correlated social avoidance motivation with false classifications of happy and angry faces in all levels of visibility. The correlations between social avoidance motivation and false classifications were significant for the least visible expressions (false classifications of happy faces: $r = .27$, $p = .017$; false classifications of angry faces: $r = -.23$, $p = .046$). Unexpectedly, the correlation between social avoidance motivation and false classifications of angry faces was also significant for the most visible condition, $r = -.24$, $p = .037$). As there were very few false classifications in the most visible condition, we explored if this correlation is driven by an outlier. This seemed to be the case. After excluding one participant who lay more than three standard deviations from the sample mean in false classifications of angry faces in the most visible condition, the correlation did not reach statistical significance ($r = -.17$, $p = .132$). None of the other correlations in any of the conditions were statistically significant (all $ps > .132$).

Thus, it seems that social avoidance motivation is associated with biased processing of the least visible social stimuli. An alternative interpretation of the results could be that social avoidance motivation is associated with better *detection* of negative facial expressions. To test this alternative hypothesis, we computed d' (detection sensitivity) that indicates the ability to distinguish signals (i.e., correct classifications) from noise (i.e., false classifications; Stanislaw & Todorov, 1999); d' is computed by subtracting the z score that correspond to the false-classifications rate from the z scores that correspond to the correct-classifications rate. No correlation between social avoidance motivation and d' for angry faces in any of the visibility levels reached statistical significance (all $ps > .163$). Thus, the current results cannot be

explained by the ability to detect angry facial expressions associated with social avoidance motivation.

Social approach motivation. Although the results of the multilevel analysis pointed in the predicted direction, the Expression Visibility \times Facial Expression \times Approach Motivation did not reach statistical significance, $b = -0.60$, $SE_b = 0.35$, $F(1, 505.77) = 2.92$, $p = .088$. None of the other main or interaction effects reached statistical significance (all $ps > .068$).⁴

In order to test if the correlations between social approach motivation and the classifications were significantly different from the correlations between social avoidance motivation and the classifications, we used the test of the difference between two dependent correlations with one variable in common (Lee & Preacher, 2013). We focused on the least visible condition as this was the condition where social avoidance motivation significantly predicted false classifications of happy and angry faces. The correlation between social approach motivation and false classifications of happy faces ($r = -.12$, $p = .282$) was significantly different from the correlation between social avoidance motivation and false classifications of happy faces ($r = .27$, $p = .017$), $z = -2.42$, $p = .016$. Similarly, the correlation between social approach motivation and false classifications of happy faces ($r = .09$, $p = .460$) was significantly different from the correlation between social avoidance motivation and false classifications of angry faces ($r = -.23$, $p = .046$), $z = 1.97$, $p = .049$.⁵

Discussion

How do social approach and avoidance motivation affect the interpretation of facial expressions? To address this question, the current study investigated the association between habitual social approach and avoidance motivation and the classification of facial expressions of different degrees of visibility. Social avoidance motivation was associated with biased interpretations of facial expressions. Persons with a high social avoidance motivation tended to

interpret poorly visible facial expressions less often as positive and more often as negative compared to persons with a low social avoidance motivation. These findings cannot be explained by better identification of negative facial expressions, which further supports the interpretation of the findings as a biased interpretation of social stimuli.

The question remains which particular mechanisms of social information processing are involved in the effects of social avoidance motivation on the classification of facial expressions. Based on previous empirical evidence, it seems likely that several mechanisms are involved. First, social avoidance motivation is positively associated with both the attention to angry faces and the time spent by looking at angry faces. In an eye-tracking study, Nikitin and Freund (2011) investigated the association between social avoidance motivation and gaze behavior towards happy, neutral, and angry faces. The higher the social-avoidance motivation was, the more frequently people directed their gaze first at angry faces, and, overall, they also spent more time looking at angry faces compared to neutral and happy faces. Second, it seems that social avoidance motivation is also associated with emphasizing negative social information (Strachman and Gable, 2006). Strachman and Gable demonstrated that based on the same perceived information about a person, people high in social avoidance motivation tended to evaluate this person more negatively than people low in social avoidance motivation. Taken together, the present findings for social avoidance motivation might be explained by a combination of (a) a greater initial attention to negative social cues, (b) longer attention to negative social cues, and (c) greater emphasis of negative social cues as compared to other cues. In other words, compared to a person low in social avoidance motivation, a person high in social avoidance motivation might have oriented his or her attention more strongly to cues signaling an angry face (such as signs of knitted eyebrows), he or she might have given more attention to these negative cues and,

302 finally, he or she might have weighed these cues more strongly in the global evaluation of the
303 facial expression.

304 An alternative explanation of the current results is based on the fact that the least visible
305 picture provided almost no information on the facial expression (see Figure 1). Although the
306 picture was based on an actual facial expression of emotion, it was hardly recognizable. At the
307 same time, participants were forced to decide if the facial expression was positive or negative. In
308 other words, it is likely that participants based their decision on their expectation of being
309 confronted with a positive or a negative facial expression rather than actually being able to
310 extract information about facial expression from the stimulus. Consequently, the key finding of
311 the current study (i.e., avoidance motivation predicting interpretation of the least visible facial
312 expression) might reflect an anticipatory effect rather than the detection of the actual facial
313 expression. In other words, angry faces might have been perceived without extracting any
314 information from the observed stimulus. People high in social avoidance motivation might
315 generally expect that social interactions with other persons will be negative, even before they
316 receive any information about the other person. This does not mean that the previously described
317 processes (greater initial attention to negative social cues, longer attention to negative social cues,
318 and greater emphasis of negative social cues as compared to other cues) do not influence the
319 information processing associated with social avoidance motivation. Rather, the present findings
320 add an additional aspect of social avoidance motivation to this process. It seems that social
321 avoidance motivation impacts information processing already before any information is provided
322 through expectations to encounter a positive or negative social stimulus (here: facial expression).
323 Speaking against a pure anticipatory effect, the rate of correct classifications in the least visible
324 condition was significantly above chance (59.71%; $t[76] = 15.81, p < .001$, see also Figure 2).
325 Thus, it seems that the results of the current study are the result of both anticipatory processes

and decoding social information. Future research needs to test these different interpretations more directly.

Contrary to our prediction, social approach motivation was not associated with the classifications of emotional expressions. As mentioned in the preliminary data analyses, we found more positive than negative classifications across the entire sample, which indicates a general positivity bias in interpreting facial expressions. This positivity bias is in line with findings that most people hold a positive view of the self, illusions of control and mastery, and optimism about the future (Taylor & Brown, 1988) as well as positively biased affective judgments of pictorial stimuli and impressions of neutral, unknown, or ambiguous human and nonhuman stimuli (Cacioppo, Gardner, & Berntson, 1999). The reason why we did not find more positive interpretations associated with high social approach motivation might be a general tendency to interpret faces in a positive way that is decreased by avoidance motivation but not additionally enhanced by approach motivation.

However, although social approach and avoidance motivation significantly differ in their predictions of the classifications (at least in the least visible condition), the non-significant results for social approach motivation might also be explained by a lack of power or other method-related issues (such as the low internal consistency of the scale). Thus, although there is empirical evidence showing that the two types of social motivation predict different social processes (Gable, 2006; Nikitin & Freund, 2011; Nikitin, Burgermeister, & Freund, 2012; Strachman & Gable, 2006), the current findings cannot provide strong evidence for the conclusion of a dissociation between social approach and avoidance motivation. Further studies with different methods are needed to clarify if the non-significant findings for social approach motivation in the current study are of method-related origins or if they are expression of a dissociation between social approach and avoidance motivation.

Limitations

One limitation of the current study are the relatively low internal consistencies of the approach and avoidance motivation scales. Different to previous studies (Sokolowski et al., 2000; Strachman & Gable, 2006), the internal consistencies in the current study were lower than the typical standard of $\alpha = .70$ (approach motivation $\alpha = .62$, avoidance motivation $\alpha = .63$). Thus, we cannot rule out the possibility that the non-significant findings for social approach motivation are due to the low internal consistency of its measurement. The fact that the results for social approach motivation pointed in the hypothesized directions but were not significant ($p = .088$) supports this methodical explanation of the current results. However, as discussed above, there is also previous empirical evidence suggesting that social approach and avoidance motivation predict different social outcomes. In addition, a study with social approach and avoidance motivations as measured by the Multi Motive Grid found similar results for social approach and avoidance motivation for the interpretation of written social information as the current study (Strachman & Gable, 2006; Study 2). Future studies using different instruments assessing social approach and avoidance motivation (e.g., social approach and avoidance goals, Strachman & Gable, 2006; Study 1) are needed to replicate the current findings.

Second, the exposure to the five visibility conditions was not random. Instead, participants saw the least visible picture first, followed by the more clearly visible conditions. Obviously, not randomizing the data leads to a dependency of the classifications within the sequence of the same facial expression presented consecutively. Our decision to use consecutive presentation of the masked faces instead of randomizing the visibility was based on two reasons: First, a randomization of the ambiguity would lead to the problem that less masked (i.e., better visible) facial expressions would be presented sometimes before the more masked (i.e., less clearly visible) facial expression of the same model. Thus, some correct classifications would be

based simply on the fact that the model had been already seen in a previous trial in a visually clearer condition. Second, only the presentation of the stimuli in a consecutive way (from the most to the least masked picture) provides the participants with a feedback on the correctness of their classifications. Given that participants had to categorize 500 stimuli, not knowing if the classifications were correct or not might demotivate participants to even attempt at classifying the highly distorted stimuli. This might be particularly true for performance-oriented participants (whose motivation suffers more if they do not know how well they are performing), thereby introducing an additional individual difference variable that is not of interest in the current study and that might obscure potential effects of social motivation. Finally, the effects of social avoidance motivation in the current study were found only in the least visually clear condition. Given that the least visually clear picture was always presented first, there is no problem of dependency for the current results.

Another limitation of the current study is that the findings of the current study are correlational and, therefore, do not allow for causal interpretations. It is possible that interpreting facial expressions in a negative way leads to high social avoidance motivation because the social world appears hostile and rejecting. As argued by Mehrabian (1994), the relationship is probably bidirectional and cyclical. Social avoidance motivation leads to biased interpretations of social information, which, in turn, reinforces the habitual motivation. Future research is needed to test the proposed cycle directly in order to learn more about how social avoidance motivation develops over time.

Finally, the current study focused on a young sample, which makes it difficult to generalize the findings to other age groups. There are some reasons to expect different results for older adults. For example, older adults have better emotion-regulation strategies than younger adults (Blanchard-Fields, Stein, & Watson, 2004). Thus, the negatively biased information

processing associated with social avoidance motivation might diminish in older age. However, first investigations of the age-related differences in the association of social avoidance motivation and social-information processing do not support this assumption. In a study investigating gaze behavior towards emotional faces, social avoidance motivation was associated with gaze preference for angry and away from happy faces for both younger and older adults (Nikitin & Freund, 2011).

Conclusion

To conclude, people generally tend to interpret social information in a positive way. This positivity effect is reduced when persons are motivated to avoid rejection and exclusion. Paradoxically, those who are most afraid of having negative social interactions anticipate and interpret social information in the most negative way, which probably leads to the reinforcement of the negative expectations.

References

- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. (1974). Infant-mother attachment and social development: Socialisation as a product of reciprocal responsiveness to signals. In M. J. M. Richards (Ed.), *The integration of a child into a social world* (pp. 99–135). London, UK: Cambridge University Press.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497–529. doi:10.1037//0033-2909.117.3.497
- Blanchard-Fields, F., Stein, R., & Watson, T. L. (2004). Age Differences in Emotion-Regulation Strategies in Handling Everyday Problems. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 59, 261–269. doi:10.1093/geronb/59.6.P261
- Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1999). The affect system has parallel and integrative processing components: Form follows function. *Journal of Personality and Social Psychology*, 76, 839–855. doi:10.1037//0022-3514.76.5.839
- Cacioppo, J. T., & Hawkley, L. C. (2005). People thinking about people: The vicious cycle of being a social outcast in one's own mind. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 91–108). New York, NY: Psychology Press.
- Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception-behavior link and social interaction. *Journal of Personality and Social Psychology*, 76, 893–910. doi:10.1037//0022-3514.76.6.893
- Downey, G., & Feldman, S. I. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology*, 70, 1327–1343. doi:10.1037//0022-3514.70.6.1327

- Ebner, N. C., Riediger, M., & Lindenberger, U. (2010). FACES--a database of facial expressions in young, middle-aged, and older women and men: development and validation. *Behavior Research Methods*, 42, 351–62. doi:10.3758/BRM.42.1.351
- Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion*, 6, 169–200. doi:10.1080/02699939208411068
- Elliot, A. J., & Covington, M. V. (2001). Approach and avoidance motivation. *Educational Psychology Review*, 13, 73–92.
- Gable, S. L. (2006). Approach and avoidance social motives and goals. *Journal of Personality*, 74, 175–222. doi:10.1111/j.1467-6494.2005.00373.x
- Gable, S. L., & Berkman, E. T. (2008). Making connections and avoiding loneliness: Approach and avoidance social motives and goals. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp. 204–216). New York, NY: Psychology Press.
- Gable, S. L., Reis, H. T., & Elliot, A. J. (2003). Evidence for bivariate systems: An empirical test of appetite and aversion across domains. *Journal of Research in Personality*, 37, 349–372. doi:10.1016/S0092-6566(02)00580-9
- Gomez, A., & Gomez, R. (2002). Personality traits of the behavioural approach and inhibition systems: Associations with processing of emotional stimuli. *Personality and Individual Differences*, 32, 1299–1316. doi:10.1016/S0191-8869(01)00119-2
- Harlow, H. F. (1958). The nature of love. *American Psychologist*, 13, 673–685.
- Lee, I. A., & Preacher, K. J. (2013). Calculation for the test of the difference between two dependent correlations with one variable in common [Computer software]. Retrieved from <http://quantpsy.org>
- McClelland, D. C. (1985). *Human motivation* (pp. xii, 663). New York, NY: Scott, Foresman.
- Mehrabian, A. (1994). Evidence bearing on the Affiliative Tendency (MAFF) and Sensitivity to Rejection (MSR) scales. *Current Psychology*, 13, 97–116. doi:10.1007/BF02686794

- Nikitin, J., Burgermeister, L. C., & Freund, A. M. (2012). The role of age and social motivation in developmental transitions in young and old adulthood. *Frontiers in Developmental Psychology*, 6:366. doi:10.3389/fpsyg.2012.00366
- Nikitin, J., & Freund, A. M. (2011). Age and motivation predict gaze behavior for facial expressions. *Psychology and Aging*, 26, 695–700. doi:10.1037/a0023281
- Sokolowski, K., Schmalt, H.-D., Langens, T. A., & Pucca, R. M. (2000). Assessing achievement, affiliation, and power motives all at once: The multi-motive grid (MMG). *Journal of Personality Assessment*, 74, 126–145. doi:10.1207/S15327752JPA740109
- Stanislaw, H., & Todorov, N. (1999). Calculation of signal detection theory measures. *Behavior Research Methods, Instruments, & Computers*, 95382, 137–149. doi:10.3758/BF03207704
- Strachman, A., & Gable, S. L. (2006). What you want (and do not want) affects what you see (and do not see): Avoidance social goals and social events. *Personality and Social Psychology Bulletin*, 32, 1446–58. doi:10.1177/0146167206291007
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193–210. doi:10.1037//0033-2909.103.2.193

Footnotes

¹In a pilot study, we tested how many of the “grain” commands are needed to significantly reduced the visibility. Based on the results of the pilot study, we used 10 “grain” commands for the creation of very high visibility, additional 15 “grain” commands for the creation of high visibility, and for each other condition (medium visibility, low visibility, and very low visibility) additional six “grain” commands in the current study.

²As the procedure was new, we included a relatively high number of different visibility conditions and a relatively high number of different facial stimuli. This procedure aimed at enhancing the reliability of the measurement.

³The reaction times did not systematically differ between the conditions and as a function of social motivation.

⁴We found no significant effects of gender of the participants or gender or age of the models on the results.

⁵We also explored if the correlations differed in the other visibility conditions. This was the case for false classifications of angry faces in the medium visibility condition (approach motivation: $r = .23$, $p = .048$; avoidance motivation: $r = -.13$, $p = .256$; $z = 2.22$, $p = .026$) and for false classifications of angry faces in the very high visibility condition (approach motivation: $r = .13$, $p = .246$; avoidance motivation: $r = -.24$, $p = .037$; $z = 2.30$, $p = .021$). None of the other correlations were significantly different from each other (all $ps > .071$).



Figure 1. Stimulus material: Example of masking for a negative female facial expression.

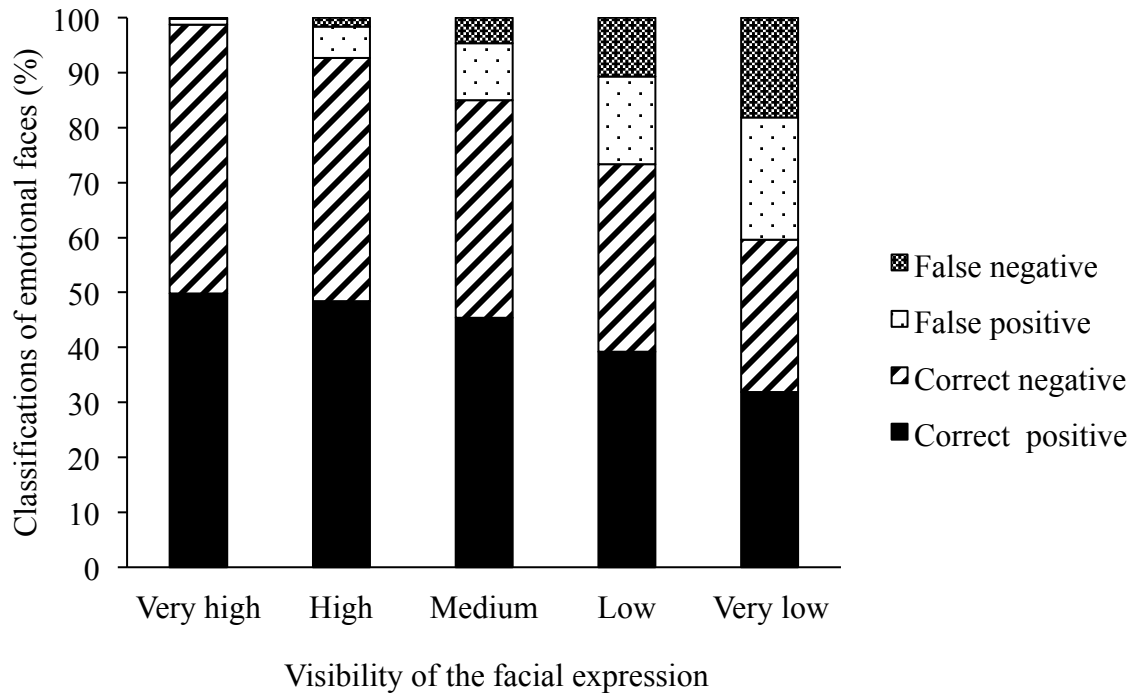


Figure 2. Proportion of correct and false classifications of positive and negative facial expressions depending on the visibility of the stimuli.